

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : C12N 5/06, 5/16, A61M 1/14		A1	(11) International Publication Number: WO 00/03001
			(43) International Publication Date: 20 January 2000 (20.01.00)
(21) International Application Number: PCT/US99/15625		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 8 July 1999 (08.07.99)			
(30) Priority Data: 09/113,774 10 July 1998 (10.07.98) US			
(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application US 09/113,774 (CON) Filed on 10 July 1998 (10.07.98)			
(71) Applicant (for all designated States except US): RHODE ISLAND HOSPITAL [US/US]; 593 Eddy Street, Providence, RI 02903 (US).		Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	
(72) Inventor; and (75) Inventor/Applicant (for US only): FARIS, Ronald, A. [US/US]; 214 Sumter Street, Providence, RI 02907 (US).			
(74) Agent: BEATTIE, Ingrid, A.; Fish & Richardson P.C., 225 Franklin Street, Boston, MA 02110-2804 (US).			

(54) Title: LIVER STEM CELL

(57) Abstract

The invention provides a primary liver stem cell and a cell doublet consisting of a hepatocyte and the stem cell, both of which are derived from normal liver tissue. Methods of isolating the cells, genetically altering the cells, and using the cells for transplantation are also within the invention.

ANTIGENIC PATHWAY OF LIVER DEVELOPMENT

